



Journal Club Summary February 2018 : “Sound and Fury”



Expert Opinion : Dr Vicki LeBlanc

*“This is just the starting point...
now it’s time for the hard work”*

The Article :

"The Human Factor : Optimising Trauma Team Performance in Dynamic Clinical Environments "

Hicks, C. and Petrosoniak, A.

[*Emergency Medicine Clinics of North America*, 36\(1\), pp.1-17](#)

Case & Summary Author :

- Dr Ben Symon

Expert Commenter :

- Dr Vicki LeBlanc

Editors :

- Dr Victoria Brazil
- Jesse Spurr

First Published :

Simulcast Journal Club is a monthly/ series that aims to encourage simulation educators to explore and learn from publications on Healthcare Simulation Education.

Each month we publish a case and link a paper with associated questions for discussion.

We moderate and summarise the discussion at the end of the month, including exploring the opinions of experts from the field.

The Case :

For a brief moment in the chaos, time had seemed to pause. The cacophony in the resus room was rising but through it all the quiet wail of the infant's parents was cutting through it all as if their grief was physically squeezing Cath's heart.

She felt the vivid tremor of her hands.

In that instant it was as if she could physically see the emotions in the room, manifesting like coloured balls of light that bounced and echoed around the bedside.

She saw her Fellow Nitin knock away the cannula tray and reach for the Intraosseous, the stress glowing a vivid red from within his chest.

She saw Harriett the social worker kneeling by the parents' chair, shielding the team from some of the thick, black grief that poured out through their tears.

Brad and his team from ICU had walked in and gravitated straight to the ventilator. He was a wonderful man but she could feel his frustration with the team brewing. She had been friends with him long enough to know he was about to snap, and the fact she was disappointing an old colleague filled her with a yellow flush of shame.

As her panic began to overwhelm, the nursing team leader moved into Cath's field of vision. She spoke just loud enough to be heard.

"You've got this. We're here for you."

Cath closed her eyes and slowed her breathing.

It was time to take back control.

Discussion :

Destined to become a classic paper we are pleased to feature Hicks & Petrosoniak's newly released from *Emergency Medicine Clinics of North America*. While not specifically focused on simulation, 'The Human Factor' takes knowledge formed and refined within the simulation room and translates it back into clinical practice.

As Simulation Educators many of us have been conduits for bringing the gospel of CRM into the healthcare workplace and as such this paper provides an important deep dive into current thinking on human behaviour and training strategies to improve our performance in a crisis.

We look forward to hearing your thoughts on this paper, and in particular:

1. What strategies from this paper might help Cath's team regain control of a chaotic situation?
2. How might this paper effect your educational practice and debriefing strategies in CRM?
3. Will it affect your clinical practice as well?

Article Summary :

For many years Simulation Educators have embraced the gospel of Crisis Resource Management, preaching to our staff about the importance of these principles and emphasising their importance in clinical practice. For some of us however, the conversation has started to feel a little shallow. To truly master 'teaming' in resuscitative environments requires a deeper dive into understanding human emotion and our physiological responses to stress, and repeatedly naming CRM principles in our debriefs does not necessarily translate into better teamwork in our resuscitation rooms.

Acknowledging that problem in their introduction, Chris Hicks and Andrew Petrosioniak's landmark paper 'The Human Factor' is a rich and deep paper, filled with specific and detailed strategies to improve teamwork that have been refined from both extensive history in the emergency setting, but also from reflections within the field of simulation.

"Resilience is built, not born".

Hicks and Petrosioniak structure their paper around 4 different levels within resus teams, which the name 'Self', 'Team', 'Environment' and 'System'.

In order to optimise the Self, the authors describe the difference between a 'challenge' and 'threat' response and advocate a number of specific strategies to maintain sufficient 'mental posture' to maintain flexibility and resilience in a crisis setting. The strategies include :

- Controlled breathing techniques
- Self talk, Cue Talk and Cognitive Reframing
- Mental rehearsal
- Stress inoculation
- Overtraining

With respect to optimising Team behaviours, the authors advocate for a number of communication specific strategies including :

- Avoid mitigating language
- Defining a resuscitation lexicon
- Practicing closed-loop communication
- Using graded assertiveness
- Setting common expectations via prebriefing and share mental models
- Modifying team structures to adapt to patient's dynamic needs

When optimising the Resuscitation environment itself, attention should be paid to :

- Iterative departmental design focused on identifying latent safety threats
- Optimising physical proximity of critical equipment and removal of extraneous items
- Utilising a 'Logistics and Safety Officer' to optimise team function during resuscitation

With regard to optimising 'System' in itself, the authors recommend :

- Judicious use of checklists and handover protocols
- Use of clinical pathways for complex events
- In Sit Simulation and Debriefing

Rather than simply naming these concepts, each strategy advised is explained in significant, specific detail.

Expert Opinion: Dr Vicki LeBlanc, PhD



Vicki LeBlanc, PhD, is Chair and Professor of the Department of Innovation in Medical Education at the University of Ottawa, and Director of the University of Ottawa Skills and Simulation Centre. Dr LeBlanc earned her PhD in experimental psychology from McMaster University in 2001.

*Dr LeBlanc has over 15 years of experience leading research into a) optimizing the use of simulation in health professions education and b) the effects of emotions and stress on the performance of health professionals and front line workers. She has authored over 100 peer-reviewed publications, and regularly presents her work nationally and internationally. She also has a number of national and international leadership roles, including serving as an Associate Editor of the journal *Advances in Health Sciences Education*, as well as working with the Royal College of Physicians and Surgeons of Canada to advance simulation-based education.*

Thank you for the opportunity to comment on the paper “The Human Factor” by my colleagues Chris Hicks and Andrew Petrosioniak. As a disclosure, Chris and I go back ten+ years. I was a young professor, trying to convince the field that we needed to go beyond skills and knowledge, in order to recognize that the emotional state of team members had a critical impact on clinical performance. Chris was a senior EM resident enrolled in a MEd program who crossed my path because he shared the same perspective. Back then, this idea was a tough sell – the prevailing thought was that you either “have what it takes” or not. The focus was on ensuring that we gave our trainees the knowledge and skills required. The rest was up to them to figure out. Chris and I (and subsequently Andrew) felt quite strongly that the field of medical education needed to be pushed beyond this mindset. We, along with other like-minded research teams¹, set about doing this with research, evidence, and advocacy.

Ten years later, how things have changed! We have open conversations about errors being part and parcel of patient care; we increasingly recognize the importance of context and environment; and the integral role of stress and other emotions on performance is widely accepted. In “The Human Factor”, Chris and Andrew share their vast experience – both from the clinical and research perspective - with aspects that can influence care at the level of the ‘Self’, ‘Team’, ‘Environment’ and ‘System’. This paper is the result of years of hard work and hard thinking by two thoughtful and passionate educators.

I’m thrilled that we’re now having these conversations, and Chris and Andrew’s paper provides good details of proven approaches. However, this is just the starting point...now it’s time for the hard work. It’s one thing to talk about these elements and to provide examples of how they can work. But, like any other skills or system change, improvements will require significant training, commitment to change, and multi-faceted approaches. My hope for the field is that we commit to the hard work to truly bring change, and to study it as we go along (to ensure that we better understand this complex interplay of factors). For example, at the individual level, superficial attempts at emotional regulation (e.g. lunch & learn lectures, reminders “in-passing”) will not help. While talking and writing about it is useful for increasing awareness, this will not be sufficient to provide learners with the skills to appropriately recognize and regulate their emotions. It’s important to keep in mind that our approaches to stressful situations represent hardened tendencies developed over a lifetime. So, when we’re trying to teach them new ways to approach stress, whether it’s tactical breathing or reframing, we’re asking our learners to unlearn strategies they’ve developed over a

lifetime and to learn a new one...and we often think/hope we can do this in just a few hours. Myself included! Chris, Andrew and I have recently found that even a half-day session, with practice and feedback, is not quite enough to overcome residents' initial approaches to potentially stressful situations. As a result, we're now looking at more longitudinal approaches borrowed from behaviour modification fields. Implementing this will require quite a bit of faith on the part of our learners and program directors who are trusting us with quite a bit of their (and the program's) time. The reward? We'll (hopefully) build the resilience that Chris and Andrew call for.

This example, although relating to the targeted level of stress management, can also speak to the other levels described by Chris and Andrew. At the "team" level, changes in communication approaches, terminology and assertiveness won't happen after an hour or two of training. The training is merely the starting point, where skills and tactics are introduced. Just as with any skill (e.g. learning to surf), mastery requires hours of practice, with and without feedback. At the "environment" and "system" level, true changes require institutional commitment and integration. A nice example of this can be found in Posner et al's paper² looking at in-situ simulation for the identification of latent safety threats – and the strengths and advantages of different approaches.

In closing, I want to commend Chris and Andrew for the broad perspective taken in their paper. While many of us likely work at one of the levels, due to limited resources or the need to dig deep into an approach, it's essential for us to collectively stick our heads up from the rabbit hole. Changes and interventions at any given level are going to interact with factors at other levels – positively or negatively. Navigating this interconnectivity will be essential to building individual and system level resilience to crisis situations.

References:

1. Arora S, Sevdalis N, Nestel D, Woloshynowych M, Darzi A, Kneebone R. The impact of stress on surgical performance: a systematic review of the literature. *Surgery*. 2010 Mar 1;147(3):318-30.
2. Posner GD, Clark ML, Grant VJ. Simulation in the clinical setting: towards a standard lexicon. *Advances in Simulation*. 2017 Dec;2(1):15.

Summary of this Month's Journal Club Discussion :

Blog Contributors :

- Suneth Jayasakera, Ben Symon, Vic Brazil, Sarah Janssens, Derek Louey, Nemat Alsaba
- Lauren Kennedy, Bishan Rajapakse, Paul Elliott, Sophie Brock

The response to the paper from bloggers this month was universally positive with only mild critique of the paper itself. Interestingly different journal clubbers found different parts of the article resonated more strongly with themselves than others. Overall, common themes identified were :

- The paper is quite detailed and requires reflection and rereading for maximal impact.
- The principles described in the paper are quite universal and relevant to teams outside a trauma setting.
- The paper reframes a number of philosophical pre-conceptions about resus teams

The paper is quite detailed and requires reflection and rereading for maximal impact.

The paper was described by various bloggers as 'meaty', 'information dense', and full of 'so much gold'. Many of us mentioned needing to read it and come back to again in order to absorb more specific details and tips. While this could in many ways be considered a strength of the article, Vic Brazil questioned whether in fact the paper could have been 'published as a 3 part series'.

The principles in the paper are relevant to teams outside of a trauma setting.

Multiple responders noted that the themes and structure of the case were relevant to those of us outside major trauma setting. Sarah Janssens, an obstetrician, for example, discussed how the concept of a Logistics and Safety Officer or event manager resonated with some behaviours that midwives she works with already implicitly do.

Ben Symon expressed concern that having the paper labelled as 'trauma' focused undersells the paper to other subspecialties, although Lauren Kennedy felt that surgical teams appear *'much better at publishing (trauma) team training initiatives and programs.. than ED or ICU'*.

The paper reframes a number of philosophical pre-conceptions about resus teams.

A number of journal clubbers identified aspects of their resuscitation teaching that were challenged by the paper. Derek Louey discussed his thoughts on the importance of Followership, Bishan Rajapakse found the breakdown of 'Threat Response' vs 'Challenge Response' particularly useful, while Paul Elliott shared a rich analogy regarding how a previous colleague taught about the importance of shared mental models and 'thinking out loud'.

Acknowledgements :

Thank you to Dr Vicki LeBlanc for her expert commentary this month.

Thank you to all commenters this month for sharing your thoughts and allowing us to learn from you.

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References :

1. Hicks, C. and Petrosniak, A. (2018). [The Human Factor](#). *Emergency Medicine Clinics of North America*, 36(1), pp.1-17.